

Navajo Abandoned Uranium Mine

Site Screen Report

This form is for use at the site of abandoned uranium mines (AUM) located on Navajo Nation lands. Applicable sites include all mine and mine features that have or have not undergone reclamation by the Navajo Abandoned Mine Lands Reclamation Program, including features, adits, pits and waste piles. Applicable sites also include all AUM sites listed in the USEPA CERCLIS database, all sites listed in the 2008 AUM GIS Report issued by USACOE and USEPA, all AUM sites on allotment lands associated with the Navajo Nation, and any and all AUM sites not listed in any database located on Navajo lands. Reconnaissance of any sites located on lands adjacent to Navajo lands that may be impacting Navajo lands will need to be coordinated with the authorities appropriate to those lands.

The purpose of the form is to ascertain the status and location of the identified AUM site, and record all immediate site information associated with the mine site. Decisions and recommendations on what additional steps are needed will be provided on a separate document.

North Star AUM Site

Navajo AUM Northern Region

Prepared by:

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Contract: W91238-06-F-0083

12767.063.496.1111

March 2010

Part I Site Identification, Location and Status**Site Names and ID numbers as applicable****Mine ID:** 649**Map ID:** N133**CERCLIS:** NNN000908926**Navajo Abandoned Mine Land Reclamation Program:** NA-0410**Local name / Aliases:** VCA Plot 12; Syracuse Mine; East Reservation Lease Plot 12**Chapter and local area:** Red Valley Chapter**County:** Apache**State:** Arizona**Lat/Long:** 36.7679009316 N / -109.046365238 W**Nearby road and highway:** Indian Route 63**Local Post Office:** Beclabito, NM**Surface Land Status: check one or more and provide ownership and contact information below****Tribal Trust Land**☒**Public lands**☐**Private**☐**Tribal Fee Land**☐**Bureau of Land Mgmt**☐**Allotment**☐**State**☐**Fee land**☐**Subsurface Mineral Rights:**

No information on subsurface mineral rights ownership was found in the EPA/AUM Database.

Claim and operator information:

The mine site surface land status is classified as Tribal Trust Land. Historical documents showed the operator of the mine as Vanadium Corp. of America from 1942 to 1962. No other historical ownership / lease information was identified in the EPA/AUM database.

Number of residential structures within 200 feet of mine:

None

Estimated volume of mine waste onsite:296 yd³

Part II Summary of radiological readings

Highest gamma radiation measurement:

189,533 counts per minute (cpm)

Describe any other radiological measurements:

A total of 1,563 gamma radiation measurements were collected from the mine site, ranging from 8,354 cpm to 189,533 cpm. Measurements in the vicinity of the waste debris immediately below the adits were found at levels up to 190,000 cpm. The measurements are represented in Figures 1 and 2.

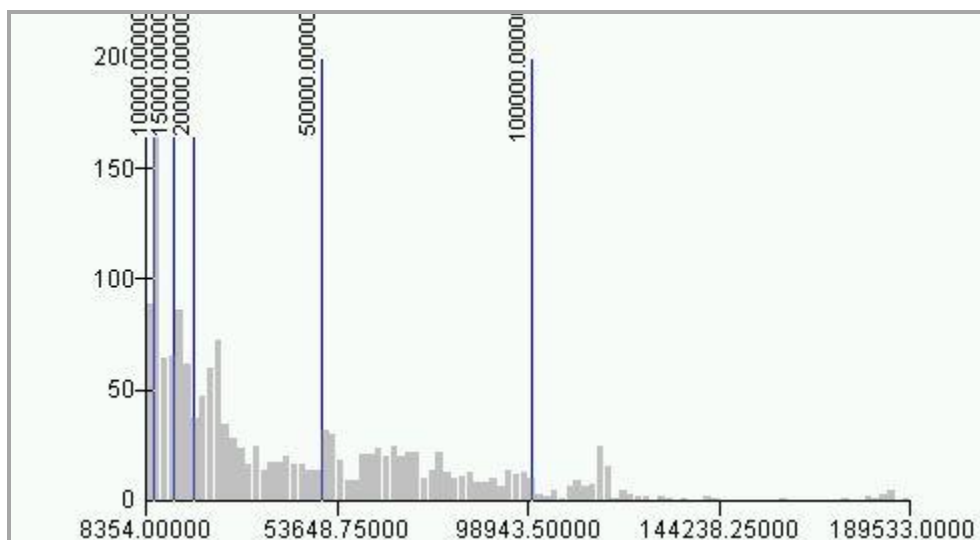
Background Locations

#1 10,431cpm

Average background = 10,431cpm

Distribution Chart and Statistics:

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



Count:	1563
Minimum:	8354.00000
Maximum:	189533.00000
Sum:	66669402.00000
Mean:	42654.76775
Median:	27516.00000
Standard Deviation:	34010.12023

Part III Status of Reclamation and Mine Waste

The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:

NAMLRP Status of the mine site: Reclaimed : Yes Waste Pile onsite : Yes

NAMLRP Project Number: NA-0410

NAMLRP Mine features: 1 Portal, 2 Prospects

The following information was obtained from field observations collected during the 2009 site screening:

Provide description and status of all mine sites and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.

Observed reclamation work and status:**Adits**

4 adits sealed with rock.

Waste Piles

Waste rock below adits, 20' x 20' (4), with a total estimated volume of 296 yd³

Pits

None

Shafts

None

Other Debris and Mine Features

Loading area with stacked rocks at bottom of mine

Part IV

Site observations and Environs

Observed Structures: list number of and describe human habitation status of structures at the following distances from mine:

0 to 200 feet: None

200 feet to 0.25 mile: None

Observed Public or commercial structure: list and describe all schools, clinics, Chapter Houses, places of business and any other structure used by members of the community at the following distances:

0 to 200 feet: None

200 feet to 0.25 mile: None

Levels measured around the perimeter(s) of the identified structure(s):

None

Observed water sources: list the number and type of wells and surface water sources that are potentially used for human consumption at the following distances from the mine:

0 to 0.25 miles: None

0.25 miles to 4 miles: None

Sensitive environments: note and describe all sensitive environments located within visible range of the mine site, including: wetlands, endangered species, habitats and approximate locations of sites that may be under protection of the government of the Navajo Nation.

None observed

Known Site History: include information from interviews with Chapter officials and residents. Note information on mine ownership, type of mining operation, period of operation, known amount of production, and any other information as provided.

North Star mine consists of an area of 22,511.87 m². The mine was identified as being operational from 1942 to 1962. Historical documents showed the operator of the mine as Vanadium Corp. of America from 1942 to 1962. While operational, the mine had a total reported production volume of 625 tons. No other historical information or any additional ownership / lease information was identified in the EPA/AUM database.

Part V Response Action Summary

Site Name(s): North Star

Chapter: Red Valley

Decision Criteria

Is there an unreclaimed waste pile at the site? Yes

At what distance from the waste pile is the nearest residential structure located? None

At what distances from the waste pile are there potential drinking water sources? None

Is there a reclamation cap or sealed adit in place at the site? Yes

Is the cap/seal functionally intact? Yes

Is the cap/seal sufficiently degraded to create a concern about releases? No

At what distance from the cap/seal is the nearest domestic structure located? None

At what distance from the cap/seal is the nearest domestic drinking water source? None

Summary of emergency response factors

None

Summary hazard ranking system factors

None

Summary of reclamation factors

4 adits; 4 waste piles; possible loading area

Part VI Photos



Photo 1. Mine site



Photo 2. Mining evidence



Photo 3. Drill holes



Photo 4. Sealed adit



Photo 5. Waste debris



Photo 6. Sealed adit



Photo 7. Sealed adit



Photo 8. Sealed adit



Photo 9. Sealed adit



Photo 10. Sealed adit



Photo 11. Waste debris



Photo 12. Sealed adit



Photo 13. Stacked rock



Photo 14. Below mine site

Part VII Contacts Reports and InformationName: Stanley Edison (928) 871-6861Eugene Esplain (928) 871-7331Title or official role (if any) Navajo EPA Superfund ProgramAddress PO Box 2946, Window Rock, AZ 86515Information provided Lead Regulatory Agency

Name _____

Title or official role (if any) _____

Address _____

Telephone number _____

Information provided _____

Name _____

Title or official role (if any) _____

Telephone number _____

Information provided _____

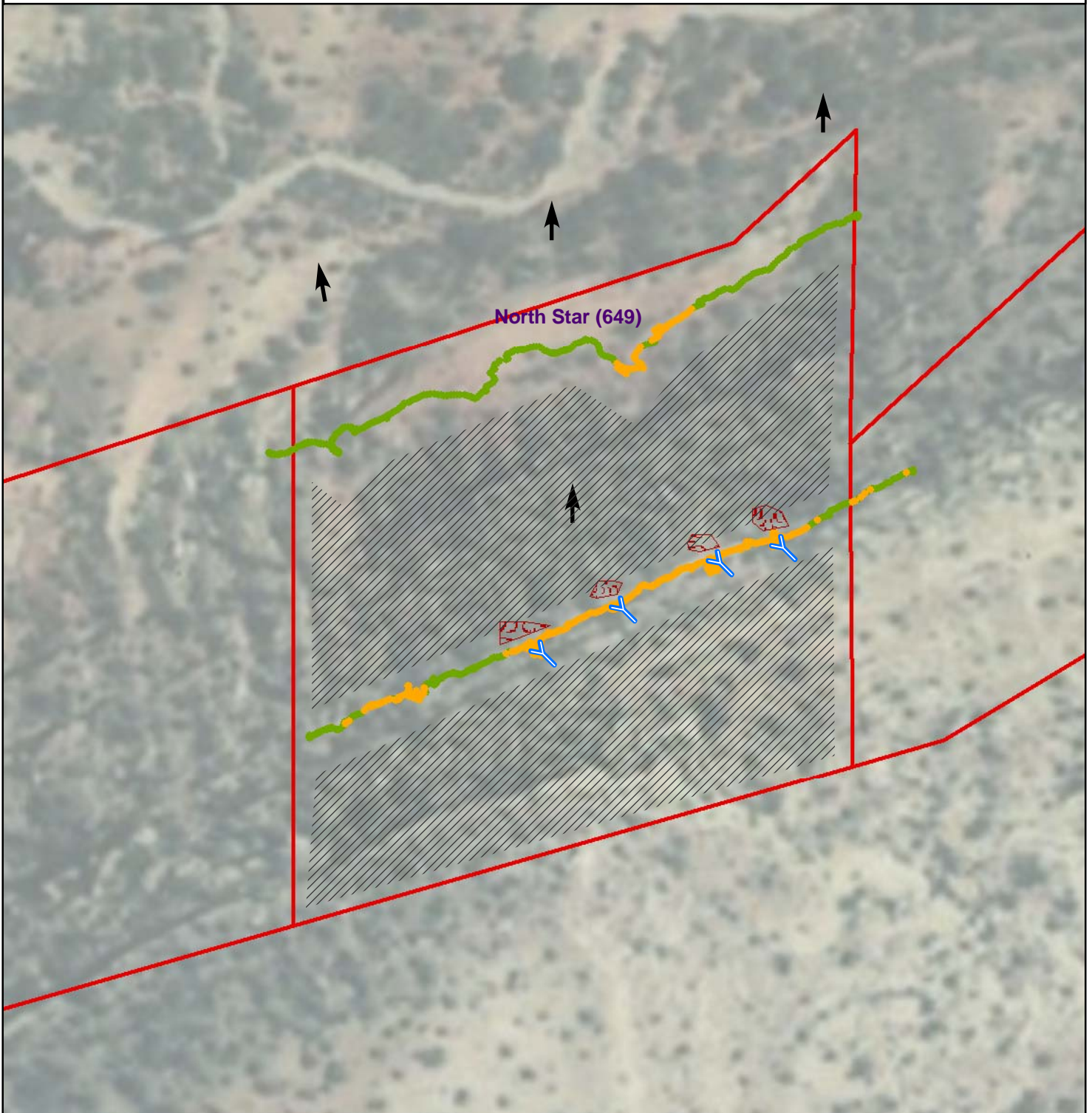
Name _____

Title or official role (if any) _____

Telephone number _____

Information provided _____

**Figure 1 - Gamma Radiation Measurements, Above Two Times Background
North Star (649)
Red Valley Chapter, Navajo Nation, Arizona**








Legend

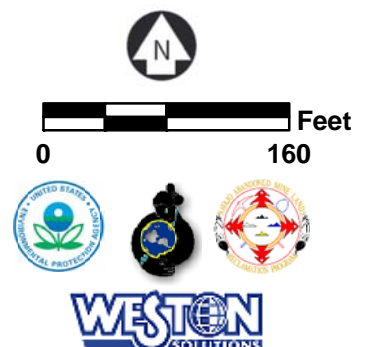
Gamma Radiation Measurements

- < 2X Background
- > 2X Background

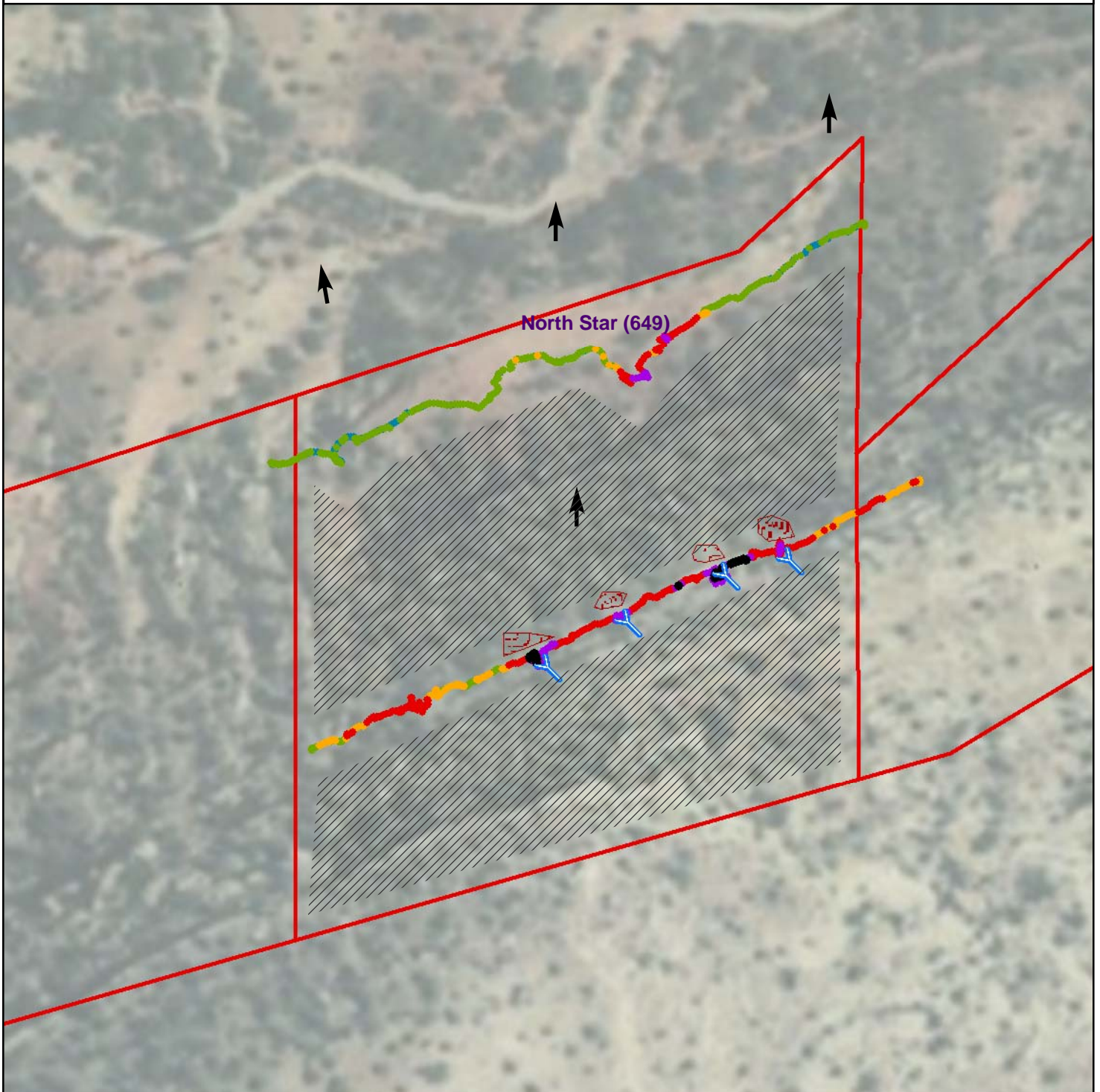
Gamma survey conducted 10/2009
Measured as counts per minute (cpm)

Average background = 10,431 cpm

-  Observed Adit
-  Observed Waste Pile
-  Inaccessible due to steep grades
-  General Direction Down-Slope
-  Mine Claim Boundaries



**Figure 2 - Gamma Radiation Measurements
North Star (649)
Red Valley Chapter, Navajo Nation, Arizona**



Legend

Gamma Radiation Measurements

- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000



Observed Adit



Observed Waste Pile



Inaccessible due to steep grades



General Direction Down-Slope



Mine Claim Boundaries

Gamma survey conducted 10/2009
Measured as counts per minute (cpm)

Average background 10,431 cpm



0 150 Feet



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